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## FINGER GUARD FOR SWINGING DOORS

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This invention relates generally to finger guards for swinging doors and more particularly to a new and improved construction for such guards having application to swinging doors of any type and having many advantages in use and from a manufacturing and installation standpoint.

In conventional installations of swinging doors the pivoted end of the door preferably will have a close fit with the adjacent door jamb when the door is in closed position, but when the door is opened a wide gap is formed between the door edge and the jamb. It therefore is very easy for someone to inadvertently or purposely insert a fairly sizable object into the gap when the door is opened and then, when the door is closed, the leverage applied is of such magnitude as to exert substantial pressure on whatever is caught between the door edge and the jamb. In particular, careless or exploring fingers are frequently caught in doors in this manner, resulting in painful and injurious crushing of the fingers. This dangerous situation is particularly acute with installations in public or commercial buildings subjected to heavy traffic and where children are involved, particularly where the door can swing in either direction and is automatically operated.

Therefore, it is an object of the invention to provide a finger guard of simple construction which will provide adequate protection against anyone purposely or inadvertently getting his fingers caught between the pivoting edge of a door and a door jamb. Included in this aim is the object of providing such a finger guard which is economical to fabricate and simple to install, which is pleasing in appearance, and which can be applied universally to all existing types of swinging doors whereby widespread use of the finger guard will result, thus overcoming the dangerous condition referred to.

Other objects will be in part obvious, and in part pointed out more in detail hereinafter.

The invention accordingly consists in the features of construction, combination of elements and arrangement of parts which will be exemplified in the construction hereafter set forth and the scope of the application of which will be indicated in the appended claims.

In the drawing:

Figure 1 is a perspective view of a door having one of our safety or finger guards installed on each side thereof, the door being depicted in a closed position;

Figure 2 is a sectional view taken in the direction of line 2—2 of Figure 1;

Figure 3 is a view similar to Figure 2, but with the door in a partially opened position;

Figure 4 corresponds also to Figure 2, but with the door in a fully opened position;

Figure 5 is a fragmentary perspective view in section of one of the flexible guard members; and

Figure 6 is a fragmentary perspective view in section of one of the anchor molding strips.

Referring in detail to the drawing, there is shown a door 10 mounted for pivotal movement within a door frame generally designated by the reference numeral 12, the frame including a header 14, a sill 16, and side jambs 18 and 19. In the particular door selected for exemplifying the instant invention, center pivot pins 20, one at the top and one at the bottom, are utilized as the hinge means which permit the opening and closing of the door 10. In the drawing, only one pivot pin 20 is visible in each of the Figures 2, 3, and 4. It will be apparent from the following description that the invention is not limited

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in application to doors hung in the specific manner illustrated in the drawing and is equally susceptible to application on doors hung on conventional hinges or offset pivots.

Turning now to the description of the safety or finger guard, it will be observed that in the installation shown in the drawing identical guards are utilized on opposite sides of the door, and, therefore, the description for simplicity will refer only to one of the guards, duplicate numerals being utilized to indicate the duplicate parts of the other guard.

Each guard is formed of a main body or fender 22 which is similar in many respects to and may be termed an elongated hinge extending from the top to the bottom of the door. The fender 22 includes two panels or elongated strip sections 23 and 24 having an inner connecting thin section 25 which permits flexing along the section 25 permitting the panels to be moved toward and away from each other. Also included as part of the main body or fender 22 is a pair of elongated beads 28 and 30, these beads being connected to the outer edges of the panel sections 23 and 24 by additional thin sections 32 and 34. In accordance with the invention, the main body or fender 22 with the thin sections 25, 32 and 34 and beads 28 and 30 are extruded in an integral fashion from a flexible resilient material such as rubber or synthetic rubber-like materials. A particular material which has been used successfully commercially is the synthetic resin sold under the trade-mark "Plastisol." Although the panels 23 and 24 are formed of resilient material, the narrowness of the panels together with the manner which they are attached along their side edges in such that even a fairly thin section of the order of one-eighth inch will provide ample rigidity preventing anyone from forcing his fingers in between the edge of the door and the door jamb.

In order to mount the finger or safety guard with respect to the door 10 and its jamb 18, there is employed a pair of identical anchor strips or moldings 36 which preferably are made of light non-corrosive material such as aluminum which may be easily extruded in the form shown. Each molding is provided with a lateral flange 38 having extending therethrough any preferred number of apertures 40 for receiving the mounting screws 42. Disposed adjacent one edge of the flange 38 is a pair of arcuate flanges 44 extending toward each other, but terminating in a spaced relation in order to form a groove or bearing 46 and a slot 48 communicating therewith. In the preferred embodiment, the groove 46 is made considerably larger than the beads 28 and 30 (preferably two or three times as large), while the slot 48 is made narrower than the beads 28 and 30, but of sufficient width to loosely accommodate either of the thin sections 32 or 34. The reason for this preferred construction is that the function of the beads and grooves is to attach the guard to the door and the jamb without interfering with the flexing of the adjacent thin sections of the guard and without making it difficult to assemble the guards and the moldings.

In order to install the guard on an exemplary door and door jamb, the first step is to cut the guard and molding strips to the desired length. Preferably the guard and molding strips will extend for the entire length of the door which not only insures complete protection, but, also, has the added advantage of substantially closing the air passageway between the edge of the door and the door jamb thereby greatly decreasing drafts and loss of heated or conditioned air. After the strips and guard are cut to the desired length, the next step preferably is to locate and drill the holes for the securing screws 42 which can be done simply by placing the strips along the door jamb and along the edge of the door in the manner indicated. When this is completed, the beads of the guard panel are then slid into the grooves of the molding strips, which, as previously explained, is simple to accomplish because of the substantial difference in their cross sections following which the strip to be fastened to the door jamb is disposed in proper condition and fastened by means of securing screws 42. After this step, the remaining strip is then fastened to the edge of the door. As will be apparent when the door swings in only one direction